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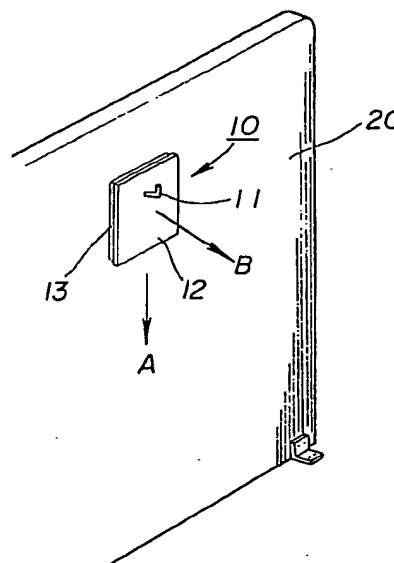
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(58) Field of search
A4X
A4L
A4B
H1P
Selected US specifications from IPC sub-classes A47G
H01F

(54) Device for hanging articles

(57) A device (10) for hanging an article, such as picture frame, on the surface of a wall or panel (20) includes a hook (11) for hanging the article, a plate member (12) to which the hook (11) is secured, and a plate-like plastic magnet (13) secured to the reverse surface of the plate member (12) so as to be attracted and retained at a desired position on a wall formed of a magnetic material.

FIG. 1



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FIG. 1

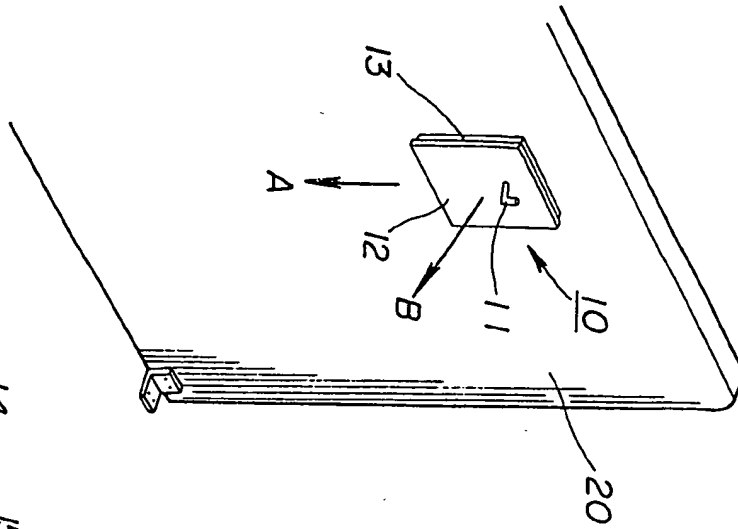


FIG. 2

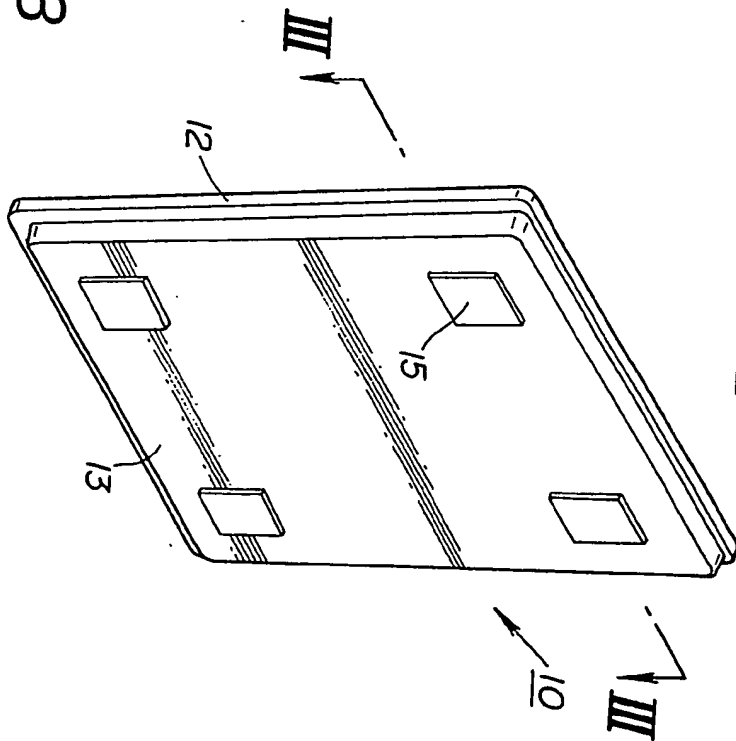
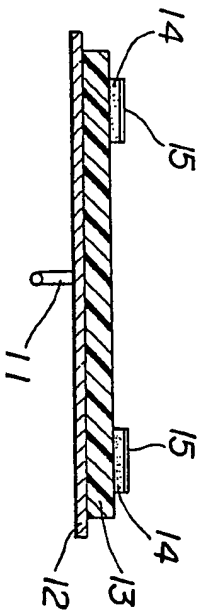


FIG. 3



SPECIFICATION

Device for hanging articles

5 DESCRIPTION

Field of the invention

The invention relates to a device for hanging an article and, more particularly to a device for hanging an article, such as a picture received within a picture frame, at a desired position on a wall surface.

The invention aims to provide a device for hanging an article which is improved in that it may be mounted at any desired position on a support surface without damaging the surface; in that it may be re-mounted a desired number of times in new mounting positions on the surface without impairing the wall; in that it may hang a relatively heavy article; and/or in that it may be easily removed without in any way impairing the wall surface.

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Summary of invention

The invention provides a device for hanging an article including means for hanging the article, a plate member to which the hanging means is attached, and a magnet in the form of a plate secured to the reverse surface of the plate member for magnetic attraction to and retention on a support surface. The device and article on it can be held by magnetic attraction on a partition wall of a magnetic material, such as iron, or on a holding plate of a magnetic material, such as iron, removably or permanently applied to an ordinary wall.

Drawings

Figure 1 is a perspective view showing a hanging device of the invention attracted in position on a partition wall made of iron;

Figure 2 is a perspective view, shown from the reverse side of the hanging device according to the present invention; and

Figure 3 is a diagrammatic sectional view taken along line III-III of *Figure 2*.

Description of example of invention

A preferred embodiment of the invention is described by reference to the drawings.

Referring to *Figure 1*, a device for hanging an article 10 is magnetically attracted and secured to an iron partition panel or wall 20 used for partitioning the interior space of a living room, an office room or a picture gallery. Such partition panel or wall, formed of a magnetic material such as iron, can be a separately marketed article of furniture. The article hanging device can also be held by magnetic attraction on the surface of a flat plate of iron or similarly magnetic material, which is removably or permanently affixed to the surface of a display wall of, for example, an existing picture gallery.

The hanging device 10 includes a hook for engaging with, for example, a picture frame, not shown. The hook is secured to a plate member 12 for example by welding. A plate-like plastic magnet 13 is secured to the reverse side of the plate member 12 for example with an adhesive.

The plastic magnet 13 employed is preferably

formed of a powdered magnetic material and a binder preferably of a polymer material such as a rubber or synthetic material. As the magnetic material, ferrite magnetic material such as BaFe_2O_3 may be preferably employed because it is less costly while it can form stronger magnetic fields. The rubber used as the binder may be natural rubber or butadiene acrylonitrile (NBR), while the synthetic resin used as the binder may be polyvinyl chloride resin, epoxy resin or silicone resin. The preferred mixture ratio of the power of the magnetic material to the binder is from 80 to 95% by weight of the powder of magnetic material to from 20 to 5% by weight of the binder. With the powders of magnetic material less than 80% by weight, sufficient adhesive properties may not be obtained. With the powder of magnetic material in excess of 95% by weight, the amount of the binder may be insufficient, hindering the shaping of the mixture into a plate-like form.

According to the invention, it is preferred that the plastic plate 13 in the form of a plate be secured so as to cover substantially the whole overall reverse surface of the plate member 12, as shown in *Figures 2 and 3*. By using the plastic magnet 13 in the form of a plate, the adhesive force can be exerted over an extended area. For example, an attractive or adsorptive force of 920 g in the slip or shean direction shown by an arrow mark A in *Figure 1* (ie parallel to the surface adhered to) and 640 g in the tensile direction shown by an arrow mark B in *Figure 1* (ie normal to the surface adhered to) can be obtained with a plate-like plastic magnet of 50 mm in length, 25 mm in width and 4 mm in thickness when attracted or adsorbed to a surface formed by an iron plate of 5 mm in thickness. Thus, by using the plastic magnet 13 which is 200 to 400 mm in length and width and 4 to 8 mm in thickness, an article hanging device can be provided which has a sufficient holding force for the intended purpose such as the picture frame, but excluding of course articles of excessive weight.

When it is desired to further elevate the holding force of the hanging device 10 of a predetermined size, as shown in *Figures 2 and 3*, a frictional or adhesive engagement can be enhanced by the attractive magnetic forces. For example a pressure sensitive adhesive 14 (see *Figure 3*) may be coated on selected portions of the adsorptive surface of the plastic magnet 13 and release paper 15 may be applied to these coated portions. When in use, the device may be applied to a selected portion on the wall surface after the release paper 15 is peeled off to expose the adhesive 14.

120 CLAIMS

1. A device (10) for hanging an article including means (11) for hanging the article, a plate member (12) to which the hanging means (11) is attached, and a magnet (13) in the form of a plate secured to the reverse surface of the plate member (12) for magnetic attraction to and retention on a support surface.

2. A device according to claim 1 wherein the plastic magnet (13) in the form of the plate is secured

so as to substantially cover the whole reverse surface of the plate member (12).

3. A device according to claim 1 or claim 2 wherein a pressure sensitive adhesive (14) is
5 provided on a selected portion or portions of the plastic magnet (13) for increasing the holding force.

4. A device according to claim 3 wherein release paper (15) is applied to the portion or portions coated with the pressure sensitive adhesive (14) before
10 using the device, the release paper being peeled off when the device is used.

5. A device according to claim 3 wherein the hanging means (11) is a hook.

6. A device according to claim 1 wherein the
15 article is a picture frame.

7. A device according to any of the preceding claims wherein the plastic magnet (13) contains a powder of a magnetic material and a binder of rubber or synthetic material.

20 8. A device according to claim 7 wherein the magnetic material is a ferrite magnetic material.

9. A device according to claim 7 or claim 8 wherein the binder is polyvinyl chloride resin.

10. A device according to any of claims 7 to 9
25 wherein the plastic magnet (13) contains from 80 to 95% by weight of the magnetic material and from 20 to 5% by weight of the binder.

11. A device for hanging an article on a support surface substantially as described with reference to
30 and as shown in the drawings.